

**ANALYZING THE RELEVANCE OF THE CURRENT FIRE MASTER PLAN
UTILIZED BY THE REDMOND, WASHINGTON, FIRE DEPARTMENT**

EXECUTIVE LEADERSHIP

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ABSTRACT

The Redmond, Washington, Fire Department provides fire and emergency medical services to a city and fire district with a population of 70,400. The Redmond area was experiencing phenomenal economic growth with direct growth management impacts affecting both commercial and residential areas of the City. In 1992, the City developed a fire services master plan document that was designed to address both short-term (5 years) and long-term (18 years) planning needs based on what was described at the time, was a primarily residential community. Given the exponential growth of the community and the fast paced changes of the fire service in recent years, the relevance and effectiveness of the 1992 master plan was questionable.

A major problem facing the Redmond Fire Department was that its fire master plan document had not been updated in eight years and may in fact no longer have represented the fire service planning needs that it was originally designed for.

The purpose of this research paper was to evaluate the effectiveness of the 1992 Redmond Fire Services Master Plan and to make recommendations for improvements based on the findings. Descriptive, historical, and evaluative research methods were utilized to answer the following questions:

1. What were the key components of an effective fire services master plan?
2. What was the relevant time frame of an effective master plan document?
3. Did any laws, regulations, or certifications mandate a fire services master plan?
4. What were other fire departments utilizing for their master planning process?

In order to do a proper analysis and to answer the established research questions, an extensive literature review was done to explore master planning and also to identify what methods fire departments should adopt to be effective in this process. Additionally, a survey regarding this topic was distributed to fire departments within the adjoining Redmond area, specifically the King County, Washington, Fire Response Zone 1. The data collected was then utilized to do a comparative analysis between the Redmond planning process and the other agencies surveyed. Objective criteria established in the literature review were used to make those comparisons.

The results of the project showed that the original Redmond Master Plan document had been appropriately set up and designed. The original document had several of the key components that were identified as being critical for an effective comprehensive document as well. These categories were (a) an executive summary, (b) a summary of the current fire and emergency medical service delivery system, (c) fire service response planning factors, (d) Redmond area development projections, (e) projected population and call for service workloads, (f) future fire station requirements, (g) analysis of the feasibility of fire service consolidation, (h) fire service organizational and programmatic issues, and (i) a profile of the Redmond Fire Department and comparative information on regional fire departments.

Although the document had been developed with input from within and without the Department, the relevance of the document was suspect due to its assumption that it could

be valid predicting growth needs not only beyond five years but more unrealistically in the twenty-year range. Comparatively, Redmond needed to update its plan but more importantly the research showed that master plans were quickly being phased out in lieu of more short-term, action oriented, strategic planning. This type of planning appeared to be the new paradigm and was accomplished on the one to two year ranges. More importantly, strategic planning was designed to tie a department's goals and objectives to its strategic initiatives. The shortened review time (1 to 2 years versus 5 to 20) afforded the opportunity for a department to redirect its efforts and levels of service based on the rapidly changing conditions of the community and its service needs. There were no mandates or laws requiring master plans that were identified. Since the Redmond Fire Department was considering applying for accreditation through the Committee for Fire Accreditation International (CFAI), it was clear the Department's 1992 master plan document was not going to suffice.

Considering the findings of the project, it was recommended that the Redmond Fire Department build off its present master plan and pursue the following:

1. The Department should undertake a community risk and capability analysis.
2. The Department should adopt strategic planning and concentrate on short-term efforts that would be geared towards one or two years as a maximum for review periods.
3. The Department should consider hiring a consultant to assist with coordination of a risk and capability assessment and tie this process into building strategic initiatives that supported achieving the community's desired levels of service.

4. The Department should pursue the CFAI accreditation and gear department goals and objectives towards producing data to meet the criteria that was established in the accreditation review.

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INTRODUCTION

In 1992 the Redmond, Washington, Fire Department developed a fire services master plan. Its purpose was to provide a practical and flexible approach for planning emergency services due to projected growth both in the City and in the adjoining Fire District #34. The process involved both department personnel and selected community members. The master plan that was developed in 1992 was predominantly engineered to address short-term (5 years) and long-term (18 years) needs based on what was described at the time, as a primarily residential community (Redmond 1992). Almost a decade later, the demographics and commercial growth have significantly changed.

A major problem facing the Redmond Fire Department is that its current fire master plan document has not been updated in eight years and may in fact no longer represent the fire service planning needs that it was originally designed for.

The purpose of this research project was to evaluate the effectiveness of the current Redmond Fire Services Master Plan and to make recommendations for improvements based on the findings. Descriptive, historical, and evaluative research methods were utilized to answer the following questions:

1. What are the key components of an effective fire services master plan?
2. What is the relevant time frame of an effective master plan document?
3. Do any laws, regulations, or certifications mandate a fire services master plan?
4. What are other fire departments utilizing for their master planning process?

BACKGROUND AND SIGNIFICANCE

The Redmond, Washington, Fire Department provides fire and emergency medical

services to the city of Redmond (population 40,400) and King County Fire District #34 (population 30,000). The Department's service area includes single family residential structures, multi-family residential structures, commercial and light manufacturing occupancies, as well as a significant high technology segment of the business community. Additionally, the service area has some major ingress and egress corridors without significant secondary alternatives. The area has a major petroleum (gasoline, diesel, and jet fuel) pipeline running within it, as well as a large natural gas pipeline. There are also several hazardous material waste generator (light industrial occupancies) sites within the service area.

The assumptions that the 1992 master plan document made about residential and commercial growth are predicted to be significantly under estimated. This has been due to the fact that Redmond has experienced phenomenal growth in both of these areas as the whole Puget Sound regional economy has boomed. With companies such as Microsoft, Nintendo, and Eddie Bauer establishing their corporate headquarters in Redmond, such projected planning in the 1992 document did not foresee the exponential expansion of the area's economics nor the associated commercial and residential growth impacts.

The original document did not specifically address the need for an update and the whole concept of long-term master planning seems suspect in an age of technological information overload and a geographical region of fast paced economical growth. With such changing conditions, an update to the current master plan seems needed but the master plan methodology of long-term planning needs to be reexamined for relevancy given the community's meteoric expansion and ever changing service needs. Failure to update the current master plan or adopt formal strategic planning will put the Department and the community at risk of being unprepared

to meet the fire service needs and challenges that such growth inevitably brings. In essence, the Department may not be able to properly protect the community it serves.

The National Fire Academy's Executive Fire Officer Program outlines the need for the fire service leader to engage in analysis and evaluation to effect change within organizations. There is a saying that you can take a minute to make a plan or else make a plan a minute. Throughout the course materials, strategic planning was underscored in reference to both individual as well as organizational growth. Additionally, accurate and up to date information was noted as being the cornerstone of personal and organizational growth. Decision-making was highlighted in several of the case studies throughout the course text. Many times the themes of good data and accurate information were tied to effectual or non-effective decisions. Furthermore, the course routinely delivered the message that any organization that is operating on out of date paradigms is doomed to failure. The Swiss fall from domination of the watch world in which they failed to embrace and capitalize on the invention of their own researchers, the electronic quartz movement in 1967, is a prime example of this.

A whole chapter in the Executive Leadership course manual was dedicated to managing change. A process that is describe in four parts as (a) recognize that you are dealing with change, (b) conceptualize a strategy to deal with the change, (c) apply the principles of change, and (d) be reflective, learn from experience, make adjustments as you go along (NFA, 1996, pg. SM 11-7). This four step process equates the need for the Redmond Fire Department to participate in strategic planning and at the very least update its current master plan (NFA, 1996).

LITERATURE REVIEW

Master planning is without question the single most important process for establishing an effective fire protection system for the community. It optimizes the use of community resources to create the level of protection that the community deems desirable, appropriate, and economically affordable (FEMA, 1994, pg. 12-4).

Gone are the more stable days for local governments. When revenues were plentiful and public officials could merely adjust tax rates to balance budgets, life was relatively simple and routine. The outside environment did not pose significant challenges, opportunities, or threats. Public programs were merely increased in response to citizen demands for more services. In the future, both the scale and mix of public services, as well as how they are financed, will be reevaluated in response to changes presently taking place in our society (Kemp, 1993, pg. 1).

The Redmond, Fire Department Fire Services Master Plan (1992) was the result of efforts involving staff members of the fire department, the management consulting firm of Hughes, Heiss, and Associates, and a broadly based steering committee of citizens from the city of Redmond and King County Fire District #34. Its purpose was to provide the city of Redmond with a practical, flexible, fire service plan for the future as the City and District grew. The Master Plan encompassed two planning periods, a five-year plan for specific goals and an eighteen-year plan (to the year 2010) for more general direction.

The effort attempted to provide a relatively simple set of planning criteria, options, and targets. It did not attempt to impose a plan more appropriate to a large metropolitan area on Redmond. However, the master plan did try to bring Redmond an approach to bring fire

service standards and capabilities to a level that best balances fire protection needs of a predominantly residential community (as it was describe in 1992) with cost effectiveness.

The 1992 Redmond Master Plan projected a 60% increase in population over 18 years. Current population calculations are along the lines of 74%. The master plan did not address job population that in 1999 is at 58,500. This figure is now more than the residential population of 44,400 in the city proper (Redmond, 1999).

While a major focus of a master plan relates to fire station location issues and alternatives, it should also assess the feasibility of regionalism/consolidation as well as the fire department's involvement in a wide variety of programs and services to the communities it serves (Redmond, 1992).

The Redmond Fire Services Master Plan of 1992 addressed the following in its document:

Executive Summary

Summary of the current Fire and Emergency Medical Service Delivery System

Fire Service Response Planning Factors

Redmond Area Development Projections

Projected Population and Call for Service Workload

Future Fire Station Requirements

Analysis of the Feasibility of Fire Service Consolidation

Fire Service Organizational and Programmatic Issues

Attachments: 1) Profile of the Redmond Fire Department

2) Comparative Information on Regional Fire Agencies

3) Glossary of Terms (Redmond, 1992).

The Bellevue, Washington Fire Department Fire Services Master Plan update of 1993

addressed the following components in its update:

Executive Summary

Introduction

Measuring Effectiveness, Efficiency, and Productivity

Operations

Fire Prevention

Emergency Preparedness

Communications

Personnel Management

Apparatus, Equipment, and Facilities

Management Structure and Organization

Options and Recommendations

Appendices - Comparative Agency Information (Bellevue).

According to Rick Risdon (Fire Engineering, 1989) providing an acceptable level of fire protection at a reasonable cost via public and private action - the goal of the fire protection system - can be accomplished by conducting risk and capability analysis. Such analysis will identify the areas of imbalance between risks to the community and its capabilities to deal effectively with those risks, and secondly, will determine the issues that must be addressed in order to narrow the gap. Once you have an understanding of the problems, you can begin to focus on the solutions.

With this in mind Risdon cites a Menlo Park, CA, Fire Protection report entitled “Fire Risk Analysis,” that identifies the following areas that are considered critical in conducting a study of risks and capabilities for an organization. These are; personnel and administration; fire suppression; fire prevention; training; apparatus and equipment; physical fitness; and emergency communications.

The U.S. Fire Administration has developed a master-planning model that outlines twelve steps that should be inclusive in any master plan. These are:

1. Planning to plan, in other words who must authorize the process, support it, and who will be involved in its development.
2. The second step is an analysis of the community’s problems and needs, and the resources available to address those needs.
3. Scan the political environment and assesses the probabilities of successfully implementing control programs in the areas identified and analyzed in step two.
4. Select the members of an advisory committee for the master plan.
5. Develop a mission statement and goals and objectives for the plan.
6. Next, the planning team should review the data analysis to determine what objectives best meet the goals.
7. Each alternative generated in step six that requires a foundation of legislative mandate would move to step seven and an examination of any legal barriers would be examined.
8. In this step, the planning team analyzes the cost of each alternative for an objective. This gives rise to the cost/benefit comparison of various alternatives.
9. Develop a financial plan to pay for the proposed programs.

10. Compile data into draft plan and review.
11. Finalize the plan and submit it formally to council or governing body.
12. Implement the plan (FEMA, 1994, pp. 12.8 - 12.13).

Strategic planning is successful if the pitfalls are avoided. The process must be structured for continual reexamination. Forecasts must flow from perceived changes in the environment and not mirror past performance. The process must be correctly balanced to avoid over optimism and complacency. Success should not be interpreted as a time to rest from planning, and management should carefully select the changes to which it will respond (Melcher & Kerner, 1988, pg. 14).

The Bellevue Fire Department developed its first Master Plan in 1979 to establish a systematic approach to providing public fire protection and other emergency services in the rapidly growing city of Bellevue, Washington. The development of a master plan for fire protection was a new concept at that time. The plan introduced the concept of establishing measurable goals and performance objectives for providing emergency services and balancing the level of fire protection provided by the City to correspond with the level of fire risk in the community. This plan successfully guided the development of the Bellevue Fire Department through the 1980s. In early 1991 a decision was made to revisit the master plan, to determine how effectively it had met its objective, to see if the objectives that were established in 1979 were still appropriate, and to decide on a direction for the Bellevue Fire Department for the next 10 to 15 years (Bellevue, 1993, pg. 1-1).

The master plan, for all its political, policy, and organizational value, is only a document. It cannot react to changes in the community, in the economy, or in the political environment. The

department must go to great lengths to continue the implementing, evaluation, and planning cycle that is critical in the master planning process (FEMA, 1994, pg. 12-14).

The United States Congress identified the importance of fire master planning in 1974 when it created the National Fire Prevention and Control Administration (now known as the U.S. Fire Administration) with a specific mandate to “report on the establishment and effectiveness of master plans in the field of fire protection and control throughout the Nation.” While this was only one of the mandates given the Fire Administration by Public Law 93-498, it was a major emphasis for the act, stating in part: “Sec. 10 (a) General -- The establishment of master plans for fire prevention and control is the responsibility of the States and the political subdivisions thereof. The administrator is authorized to encourage and assist such States and political subdivisions in such planning activities, consistent with his powers and duties under this Act” (FEMA, 1994, pp. 12.2 - 12.3).

In a report to Congress entitled *America Burning: Report of the National Commission on Fire Prevention and Control*, recommendation Number Ten (10) of that report states: “The Commission recommends that every local fire jurisdiction prepare a master plan designed to meet the community’s present and future needs in fire protection, to serve as a basis for program budgeting, and to identify and implement the optimum cost-effective solutions in fire protection”(FEMA, 1994, pg. 12-3).

“The term ‘Master Plan’ can be misleading. At times it may be interpreted as being a mandated legislative process such as a land use general plan. For fire departments, master planning is not a mandate, but rather a discretionary exercise initiated by a city and its fire department (Redmond, 1992, pg. i).

A master plan provides authority and direction for the actions necessary to achieve the objectives. While a master plan is not law, it is a statement of community policy. Local ordinances thus may be passed to implement and enforce the intent of the plan (FEMA, 1994, pg. 12-3).

One of the areas that may have direct impact on the organization's need to have an up to date master plan is the impact it may have on the Insurance Service Office's (ISO) rating. In an article in Fire Rescue Magazine, David Doudy (May 1998) referred to Animas, CO, Fire Department's need to formulate a ten-year plan to replace apparatus and equipment. In this article there was a reference to the fact that stations, equipment, and manpower levels have a direct impact on the districts/agency's ISO rating.

However, Howard Tipton, former administrator of the National Fire Prevention and Control Administration, commenting on the relationship of the ISO schedule and the principles of master planning in a 1977 article, stated, "the master planning process suggests consideration of the Grading Schedule, but in no way endorses or recommends it. Consideration of the ISO Grading Schedule is only one part of master planning (FEMA, 1994, pg. 12-7)."

On October 27, 1988 and December 8, 1988, the International City/County Management Association (ICMA) and the International Association Fire Chiefs (IAFC) Executive Boards signed a memorandum of understanding that committed both organizations to the development of a voluntary national fire service accreditation system. This commitment was made by both organizations after several years of reviewing state, local government, and governmental fire services, specifically on how communities can evaluate their risks and

allocate their resources based upon the mission and objectives of their emergency service organization (CFAI, 1997, pg. 1-1).

The Redmond Fire Department is about to begin the process of applying for accreditation and as such would be evaluated for compliance in the following categories as stated in the CFAI Assessment Manual. These categories are (a) governance and administration; (b) assessment and planning; (c) goals and objectives; (d) financial resources; (e) programs; (f) physical resources; (g) human resources; (h) training and competency; and (i) external systems relationships (CFAI, 1997, pg. 1-8).

Each aspect of today's fire service requires the development of basic strategies. Most departments do some kind of planning. Whether it is called budgeting, pre-fire planning, long-range planning, five-year planning, or strategic planning, the fire service has a long history of trying to look into the future to predict what will be (Wallace, 1998).

The process of master planning has been around since the 1970's. Only recently has the strategic planning term taken hold with significance. To this end, what differentiates master planning from strategic planning?

First, what is a master plan? According to citations from Public Law 93-498 as established by Congress and referenced in the National Fire Academy's curriculum on *The Community and the Fire Threat*:

A master plan is one that results in the planning and implementation in the area involved of a general program of action for fire prevention and control. Such master plan is reasonably expected to include (a) a survey of the resources and personnel of existing fire services and an analysis of the effectiveness of the fire and building codes in such area, (b) an analysis of

short-term and long-term fire prevention and control needs in such area, (c) a plan to meet the fire prevention and control needs in such area, and (d) an estimate of cost and realistic plans for financing the implementation of the plan and operation on a continuing basis and summary of problems that are anticipated in implementing such plan (FEMA, 1994, pg. 12-3).

Strategic planning is a systematic way to manage change and create the best possible future. It is a creative process for identifying and accomplishing the most important actions in view of strengths and weaknesses, threats, and opportunities (Sorkin, 1994).

What distinguishes strategic planning from more traditional planning (particularly traditional long-range comprehensive or master planning for a community) is its emphasis on (a) action, (b) consideration of a broad and diverse set of stakeholders, (c) attention to external opportunities and threats and internal strengths and weaknesses, and (d) attention to actual or potential competitors (Kemp, 1993, pg. 29).

Perhaps Ronny Coleman stated it best when he wrote:

It's crucial that the fire chief manage the level of service and the fire problem concurrently.

Allowing one to be out of balance with the other usually means that there will be either a series of catastrophic losses in the community or a total erosion of the resources deployed to protect it. Creating acceptable levels of service for a community is based on a comprehensive understanding of what the community wants and what the fire department can do to deliver it (Coleman, 1994).

In summary, the literature search for this research project provided a basis for what the current paradigms are for short-term and long-term planning methodologies currently being

utilized. This review allowed for an objective analysis providing information in which to gauge whether or not the current master plan of the Redmond Fire Department is sufficient or whether it needs updating. It appears from the literature search that the Redmond plan was appropriately developed with a broad base of community input, political support, and encompassed many of the critical components that were noted as being key elements of an effective plan. In reviewing the set up criteria for a plan, Redmond's appeared to score very well in this regard. The plan is now eight years old. Perhaps the most significant finding through this research was that the paradigm of long-term (greater than 5 years) master planning has shifted to strategic planning (1 to 5 years) that is action oriented towards achieving a department's goals and objectives.

PROCEDURES

Descriptive, historical, and evaluative research methods were utilized in this project to gain a basic understanding of the degree of effectiveness and relevance that the current Redmond Fire Master Plan is or is not providing the department.

The National Fire Academy's Learning Resource Center was accessed to review material in the form of Executive Fire Officer research papers, applicable references to trade journal articles, and published texts concerning master planning and strategic organizational planning. Associated texts in general publication were also reviewed, as were local and regional public agency master plan documents.

The literature review was approached in three main phases. The first had to do with identifying what the key components of an effective master plan are and how often one should be updated to maintain relevance. Secondly, research was done to identify what laws,

regulations, or certifications may mandate or dictate that the Redmond Fire Department updates its current master plan document. Finally, a comparison was sought as to what other fire departments and public agencies are doing in the form of strategic or master planning and also to determine if there is a relevant distinguishment between the two.

The data reviewed in the literature search allowed for an analysis of the Redmond Fire Department's existing fire services master plan and thereby allowed for a determination as to its current and future effectiveness. The review was done with the purpose of gathering data sufficient enough to provide answers for all the established research questions as well as discovering other perspectives that would help determine if the current document was adequate.

Furthermore, the final phase of the literature search was performed in conjunction with a survey that was undertaken to contact specific departments and agencies regarding their fire services master plan process.

Assumptions and Limitations

It is important to note that in conducting this research, limitations existed concerning the population of the members surveyed. The survey was given to all fire departments and one paramedic service (ten agencies) that exist in the same King County, Washington, Fire and EMS Response Zone #1 to which the Redmond Fire Department belongs to. In this sense, these cities represent the specific target population and relevant comparable geographic, demographic, and economic base that closely represents Redmond. However, in applying this survey population to fire departments nationwide, comparatively speaking, this survey population would not be necessarily reflective of the fire service in general. Copies of master

plan documents were requested of the agencies participating in the survey. This allowed for a more complete analysis to be made between those agencies and the current process and document of the Redmond Fire Department. Additionally, the information gathered in the literature was applied as evaluation criteria to objectively measure the effectiveness of the survey information received and also that of the Redmond process. This provided more than just a straight comparison between Redmond and the other agencies by applying an objective value to the survey information that was received.

During the research of this project there surfaced an obvious distinction between the terms strategic planning and master planning. As the project progressed it became apparent that this difference was significant and seemingly required a differentiation and exploration of the two. Additionally, in reviewing copies of actual master plan documents and references cited in the literature search, critical terms were noted that required further definition.

Definitions of Terms

Effectiveness -	The ability to produce a desired effect (Bellevue, 1993).
Efficiency -	The ratio of the effective or useful output in a system. In concept, efficiency means that efforts are directed where they will do the most good (Bellevue, 1993).
Productivity -	Effective yield of desirable output compared to input (qualitative). Percent of time spent on activities that yield desirable results (quantitative)

(Bellevue, 1993).

Fire Services Master Plan -

The master plan is a policy guide for managing the fire and life safety environment through the fire protection system. Because it is future looking, the plan provides policy in advance of change; permitting control of, rather than reaction to, the fire environment (FEMA, 1994, pg. 12-4).

Strategic Planning -

Strategic Planning may be defined as a disciplined effort to produce fundamental decisions and actions that define what an organization (or other entity) is, what it does, and why it does it (Kemp, 1993, pg. 94).

Level of Service -

A level of service is nothing more than the amount of resources that has been developed to a specific function. One cannot predict the outcome; all you can be sure of is what you are going to have available when the service is needed (Coleman, 1994).

RESULTS

The results of this research project were developed in part with information gathered from a survey. This survey (see Appendix A) was given to selected cities and agencies that have relevance to the Redmond Fire Department from a geographical and economic similarity component.

1. What are the key components of an effective fire services master plan?

Before specific components of a fire services master plan can be discussed it is necessary to review the driving purpose behind any process. There were several references in the literature to levels of service. Time and again this concept was underscored as needing to be the basis for development of a master plan. In conjunction with determining levels of service was the analysis of what a community's fire risk factors are and what resources now and in the future would be available to mitigate such factors.

Perhaps putting this in context best was Ronny Coleman in an article from Fire Chief Magazine in which he writes:

It's crucial that the fire chief manage the level of service and the fire problem concurrently.

Allowing one to be out of balance with the other usually means that there will be either a series of catastrophic losses in the community or a total erosion of the resources deployed to protect it.

Creating acceptable levels of service for a community is based on a comprehensive understanding of what the community wants and what the fire department can do to deliver it (Coleman, 1994).

With this in mind, an effective master plan must be one that undertakes a comprehensive review of the community's fire resources, fire risk factors, and then makes a determination of whether or not an acceptable level of service is present or not. Key components of a master plan document start with the original process. As outlined in the U.S. Fire Administration's model guidelines for master planning, several factors should be incorporated into the process if it is to be effective. Summarizing these twelve steps, we find that the most significant components addressed here are preplanning the process by establishing a committee of key individuals from

within and without the department. People who are stakeholders. A good risk analysis is key, as well as identification of the political and legal barriers that may prevent a process from being implemented. Sound data analysis and a projection of the associated costs that go along with any recommendations must support specific goals and objectives. To this end, a financial plan must also be incorporated into the process. Finally, adoption and implementation of the document must be accomplished (FEMA, 1994).

Although these factors represent key components of the process for undertaking a master plan, specific components of the document can take several forms, but there are general concepts found in the most effective and productive agency master plans. One of the best examples of an effective master plan document was that of the Bellevue, Washington, Fire Department update of 1993. This document included the components of an executive summary; an introduction; measuring effectiveness, efficiency, and productivity; operations; fire prevention; emergency preparedness; communications; personnel management; apparatus, equipment, and facilities; management structure and organization; options and recommendations; and comparative agency information (Bellevue 1993).

Citing a Menlo Park, CA, Fire Risk Analysis report, Rick Risdon (Fire Engineering, 1989) identified the following areas that are considered critical in conducting a study of risks and capabilities for an organization. These are; personnel and administration; fire suppression; fire prevention; training; apparatus and equipment; physical fitness; and emergency communications.

The Commission on Fire Accreditation International, uses the following categories to review how effective fire departments are that have applied for accreditation. These key categories are; governance and administration; assessment and planning; goals and objectives; financial

resources; programs; physical resources; human resources; training and competency; and external systems relationships (CFAI, 1997, pg. 1-8).

2. What is the relevant time frame of an effective master plan document?

There was not a great deal of evidence identified in the literature search indicating clear boundaries of how long a master plan document was good for. In fact, in terms of exact years there were no ranges specified. The discussion regarding time relevance seemed to indicate that it was not time but rather the demographic and economic influences that need to drive whether or not a plan needs updating or not.

The National Fire Academy, in its course guide curriculum on *The Community and Fire Threat*, states that, “the master plan, for all its political, policy, and organizational value, is only a document. It cannot react to changes in the community, in the economy, or in the political environment (FEMA, 1994, pg. 12-14). The text goes on to say that because of these ever changing factors, that in essence, updating a master plan is a continual process, based on the uniqueness of each community’s situation. In reviewing the timing of updates with the agencies that participated in the survey (see Appendix A) of this research project, again there was no clear cut time frame established as being optimal to this end.

One department, Bellevue, had undertaken three updates to its plan over a twenty-year period from 1979 - 1999. The updates were not evenly spread out further indicating that the forces described above may play a bigger role in determining when a plan needs to be updated rather than time alone.

Perhaps most significant of all was the emerging concept of strategic planning versus master planning. Several references to this short-term action planning seemed to indicate that more

emphasis needed to be placed in this direction. In fact, Melcher and Kerner (1998, pg. 14) were advocating that organizations, if they were to be successful, needed to be engaged in continual reexamination and that reliance on past performance needed to be correctly balanced to avoid over optimism and complacency. If a community was undergoing continual change than its strategic planning process should be continual as well.

3. Do any laws, regulations, or certifications mandate a fire services master plan?

Redmond adopted its master plan in 1992 but no ordinance currently exists on the local level that would mandate an update to the plan at this time. Historically, the need to establish a master plan and update such a document was recommended but not mandated when the United States Congress passed Public Law 93-498. In effect, this legislation sponsored the establishment of the U.S. Fire Administration. In regards to who should be responsible for master planning, Sec.10 (a) General states:

The establishment of master plans for fire prevention and control is the responsibility of the States and the political subdivisions thereof. The administrator is authorized to encourage and assist such States and political subdivisions in such planning activities, consistent with his powers and duties under this Act (FEMA, 1994, pp. 12.2-12.3).

There are no State of Washington laws requiring the fire department to have an established master plan or updated review. Redmond's own master plan document states that master planning is not a mandate but rather a discretionary exercise initiated by a city and its fire department (Redmond, 1992).

The literature search did, however, detail various opinions on whether or not a master plan has direct impact on a community's ISO rating. In an article in Fire Rescue Magazine, David Doudy (May 1998) used the example of the Animas, CO, Fire Department's bid to upgrade its apparatus and equipment. In this process, they undertook a ten-year plan and although stopping short of calling it a formal master plan, it incorporated many of the components of such a document. Doudy made a case that such long-term planning can have an impact on the community's ISO rating. In fact, he presented the issue by describing how Animas, CO, actually sold their ten-year plan to their governing body by outlining how such a plan, if implemented, would reduce the department's ISO ratings and thus reduce insurance rates to the community. This was an indirect impact, however, in that ISO does not require a master plan.

Conversely Howard Tipton, former administrator for the National Fire Prevention and Control Administration recommends the ISO Grading Schedule be a consideration of the master planning process but that neither mandates the other (FEMA, 1994).

Perhaps the only real link to a mandate or certification process that would require or place a significant emphasis on an updated plan is the CFAI Accreditation Process. This process specifically looks at up to date organizational plans and documentation regarding (a) governance and administration; (b) assessment and planning; (c) goals and objectives; (d) financial resources; (e) programs; (f) physical resources; (g) human resources; (h) training and competency; and (i) external systems relationships (CFAI, 1997, pg. 1-8).

Perhaps the best statement on master planning requirements comes again from the curriculum from the National Fire Academy's *The Community and the Fire Threat*, that states, "a

master plan provides authority and direction for the actions necessary to achieve the objectives. While a master plan is not law, it is a statement of community policy” (FEMA, 1994, pg. 12-3).

4. What are other fire departments utilizing for their master planning process?

A survey (see Appendix A) was sent out to ten agencies within the King County, Washington, Fire and Emergency Medical Response Zone #1. The purpose of this survey was to study what other comparable departments were using for their master planning process and more specifically what their plans addressed as relevant time frames for updating, planning periods, and key components.

The agencies surveyed are all located in Washington State and were the Bellevue Fire Department, Bothell Fire Department, Duvall Fire Department, Eastside Fire and Rescue, Evergreen Medic One, Kirkland Fire Department, Mercer Island Fire Department, Northshore Fire Department, Shoreline Fire Department, and the Woodinville Fire and Rescue Department. Two of the surveys were not returned in time to be used in this project (Bothell, and Eastside Fire and Rescue). Of the eight agencies that did return the surveys, three agencies reported that they did not have a current master plan document and did not indicate that they were planning to do so in the near future. These agencies were the Mercer Island Fire Department, Duvall Fire Department, and the Evergreen Medic One Service. Of the other five agencies that did have an existing master plan, they reported their original document was developed in the years as outlined below:

Bellevue - 1980

Kirkland - 1990

Northshore - 1997

Shoreline - 1997

Woodinville - 1993

Next, each department that had an established master plan document was asked to list the dates that the plan had been updated.

Bellevue - 1986, 1993, 1998

Kirkland - N/A

Northshore - Under review

Shoreline - 1999

Woodinville - 1999

Only the Bellevue Fire Department had done more than one update and in fact had done three since the first document was developed in 1980, with the most recent update performed in 1998. Four of the departments indicated that their agencies had utilized a consultant in the development of their original document and one (Shoreline) reported that it had not developed its original document with the assistance of a consultant. Regarding the use of a consultant to update the original document, only Bellevue had done so. However, Bellevue had done two other updates without a consultant. Shoreline and Woodinville also did updates without a consultant. Two agencies reported that they had not updated their original document (Kirkland and Northshore).

In response to the question of when the next update is planned, three stated within one year (Kirkland, Northshore, and Shoreline) and two reported within 2 to 5 years (Bellevue and Woodinville). Furthermore, each department was asked if their document covered short-term and long-range planning. Woodinville indicated that its document covered planning in the 1-5

year range. Kirkland and Shoreline indicated that their documents covered planning in the 5-10 year range. Two agencies (Bellevue and Northshore) indicated that their documents covered both the 1-5 and 5-10 year planning periods. No agencies reported long-term planning ranges beyond ten years.

Question Number Eight (8) of the survey listed key components of a master plan document as noted as being relevant through the literature search. The agencies with master plan documents responded as follows to whether or not their plan addressed these areas.

<u>4</u>	Executive Summary	<u>5</u>	Apparatus, Equipment, & Facilities
<u>4</u>	Introduction	<u>5</u>	Training
<u>3</u>	Measure Effectiveness, Efficiency, and/or Productivity	<u>5</u>	Management Structure & Organization
<u>5</u>	Operations	<u>5</u>	Response Times
<u>5</u>	Fire Prevention	<u>1</u>	Data Analysis
<u>3</u>	Emergency Preparedness	<u>3</u>	Community Demographics
<u>3</u>	Communications	<u>1</u>	Commercial Demographics
<u>4</u>	Options and Recommendations	<u>4</u>	Comparable Agency Information

Only one agency, Bellevue, indicated that their plan included all the areas noted.

In an effort to start to identify if agencies differentiate between strategic planning and master planning, that specific question was asked with three agencies (Kirkland, Shoreline, and

Woodinville) indicating they do make the distinction, while two (Bellevue and Northshore) indicated they did not.

Several agencies said that their documents or executive summaries would be available for review. Additionally, in the comment section of the survey, the Bellevue Fire Department had indicated that they had gone through the CFAI accreditation process successfully last year. The Kirkland Fire Department reported that its next plan review would be in the form of a strategic plan versus an update to its fire master plan. The Shoreline Fire Department included in the comment section a distinction between the two types of planning stating that, “the master plan identifies steps to take in reaching specific goals. Strategic plans are used to implement specific parts of the master plan.”

DISCUSSION/IMPLICATIONS

The purpose of this research project as stated previously, was to evaluate the effectiveness and relevance of the Redmond Fire Department’s Fire Services Master Plan. A document that is now eight years old. Based on the information of this study, it appears that the procedure with which the document was developed and the components addressed by the document appear to be sound in their methodology. It is the relevance of rapidly changing factors, however, that requires a new look at the original document and the concepts that were presented.

The Redmond Master Plan was developed with input from within and without the department. In reviewing the 12 steps that are recommended by the National Fire Academy’s *The Community and Fire Threat* curriculum (NFA, 1994), Redmond’s initial document was developed within the parameters of all twelve stages that were cited. Furthermore, the key

components that were incorporated into the original document were valid and consistent, in content, with other model programs found within the literature search and the other agencies surveyed during this research project. The components included in Redmond's plan were an executive summary; a summary of the current fire and emergency medical service delivery system; fire service response planning factors; Redmond area development projections; projected population and call for service workload; future fire station requirements; analysis of the feasibility of fire service consolidation; fire service organizational and programmatic issues; and attachments profiling the Redmond Fire Department and its comparable regional fire agencies (Redmond, 1992). Although, the subheadings may vary, the content of each category does a good job of addressing the Department's needs with the data given at the time. This conclusion can be further established when comparisons are made with the Bellevue Fire Department 1993 update and also the Menlo Park, CA, Risk Analysis report categories that were highlighted in the literature search. The exception to the a Menlo Park report would be the specific tie between levels of service and a fire risk analysis.

It is the relevance of time, that is the critical factor in determining the effectiveness of the current document and the need for updating. With the exception of Bellevue that performed three updates over twenty years, Redmond was typical of the other agencies that reported having original master plan documents. Most had either just completed their first review or were about to. Some had within the last couple of years just developed a master plan or strategic plan. Three of the comparable agencies indicated they make a clear distinction between strategic planning and master planning. At least one (Kirkland) said they were only going to do strategic planning from now on.

There is no mandate that requires a fire service organization to have a master plan or update of a plan. This was clear in the literature search. The Congress of the U.S.A. did establish that local governments should be engaging in master planning on a community level when they passed Public Law 93-498. All that the law mandated, however, was that the administrator of the U.S. Fire Administration assists with the development of such plans. There is no Redmond Ordinance requiring a master plan update. There is fortunately, a political perspective from some elected officials to do so.

Absent such mandates on the local, state, or federal level, what emerged as the most likely driving force for having an up to date planning document was the Committee on Fire Accreditation International process. Any fire department agency that is anticipating applying for this certification must have an up to date planning tool that addresses the areas stated for review at a minimum. As stated before, the Redmond Fire Department intends to apply for this certification.

No document in this day and age of technology and economic growth can be expected to project the needs of a community beyond the five to ten year ranges. One only has to look at the onset of safety requirements such as the 2 in 2 out Rule recently passed down by OSHA to realize that any major planning document needs to be updated frequently. The current Redmond master plan made contingencies for projected population and workload growth but could not have foreseen the legislative or political challenges that a rule such as that of the 2 in 2 out Rule has presented and how it would impact the delivery of services.

Despite efforts to manage the pace of growth through moratoriums, Redmond has been unable to stem the tide of commercial and residential development. The City is now pondering

what the levels of job and citizen populations should be in the year 2010 and beyond. Current job population is at 58,500. This is more than the population of the city proper that is now 44,400 (Redmond, 1999). Consideration of such will be made with further growth ordinances restricting how much or how little expansion the community wants to allow.

Furthermore, the contingencies for growth projected in the current Redmond Master Plan were underestimated. Redmond's plan projected a 60% increase in population over the 18 year forecast. Only eight years into the document and population figures point consistently to a 74% increase by 2010 from the original residential population (Redmond, 1992). There was no specific number established for job population, however, and this has turned out to be significant and rising. The Microsoft Corporation alone employs 17,000 people on its Redmond campus. This again points out the case that it is extremely difficult to predict the future even five to ten years out in terms of economic, demographic, and legislative impacts.

Does the Redmond Fire Department need to update its master plan? Yes but not in the sense that perhaps was thought of when this research project was first undertaken.

A new paradigm has emerged that needs to be seriously considered and even embraced by the fire service leadership of today. This new paradigm as described in the literature search is the concept of strategic planning versus master planning. Strategic planning is short-term and action oriented as was highlighted in the research. Strategic planning is frequent, done on an annual or two-year cycle, five years at the maximum. It is tied to achieving the specific goals of the department and provides a timely review to evaluate whether or not effectiveness, efficiency, and productivity are actually being achieved before it is too late to redirect. Strategic planning provides the flexibility for an organization to adjust to the current political, economic,

demographic, and legislative influences that drive a community's ability to deliver its chosen level of service. As stated in the literature, the two main factors that must be considered are an analysis of what the community's risk factors are and what resources are available now and in the future. Only then can there be a systematic and realistic approach undertaken to mitigate such projected events. Once identified, communities can then determine what level of service is desired.

What this research project has done was to identify that master planning is an old paradigm whose day is coming to an end. Strategic, short-term, reactive, action oriented planning is the future. The Redmond Fire Department must embrace strategic planning if it is to be effective. Without a comprehensive update of its organizational planning tool, any efforts to achieve certification from the CFAI would be useless. Furthermore, given the dynamically changing environment of the fire services and the Redmond area, strategic planning would ensure that the Department is able to serve its community at the desired level in an effective and educated manner.

RECOMMENDATIONS

The current Redmond Fire Services Master Plan is in need of updating. After eight years, the data and factors that influence its effectiveness have and will continue to change. The initial assumptions regarding areas of growth and safety are just two examples of why an update needs to take place. Additionally, the assumption that a document can project out beyond ten years such as the Redmond document does, is no longer accurate. This is not to say, however, that the basic assumptions of the plan were not correct and still hold validity. The Department must build off of those basic tenants and re-explore whether or not the original intent for levels

of service is still valid. A new assessment of the community's risk factors is necessary to determine whether or not the Department is still meeting the level of service that the community desired when the plan was adopted and certainly if those expectations are being met today. Additionally, any new factors regarding the political, demographic, economic, and legislative influences must be studied and evaluated for change.

With this in mind, it is hereby recommended that the Redmond Fire Department undertake the following steps to update its current planning tools.

1. The Department should undertake a community risk and capability analysis. By doing this, a current understanding can be made as to what threats currently exist within the community. This analysis should include an evaluation of all risks and be inclusive of not just fire suppression issues but emergency medical and disaster responses. A review of the legal requirements to perform these services must be incorporated as well. Capability assessment should be addressed utilizing the criteria as stated in the CFAI accreditation process.
2. The Department should adopt strategic planning and concentrate on efforts that are geared towards one or two years as a maximum for review periods. Projections can and should be made for five-year planning but the department should concentrate on annual or biannual reviews of its strategic initiatives with annual reviews of its goals and objectives. It is within this range that the Department will achieve its greatest effectiveness and can identify redirection if needed. This review should be directly linked to the two-year budget cycle.
3. The Department should consider hiring a consultant to assist with coordination of a risk analysis and capability assessment and tying this process into building strategic initiatives that support achieving the desired levels of service.

4. The Department should pursue the CFAI accreditation. By doing so it will force the department to coordinate and document its real-time planning efforts. Performance measures, as well as goals and objectives should be established to address the areas that will be reviewed in the process. These are (a) governance and administration; (b) assessment and planning; (c) goals and objectives; (d) financial resources; (e) programs; (f) physical resources; (g) human resources; (h) training and competency; and (i) external systems relationships. As stated above, these areas should be the criteria applied to the capability assessment. Adopting the CFAI accreditation criteria will also establish a modern day relevance to the Department's planning and documentation methodology. It will give it credibility, as the CFAI is a highly recognized fire service standard. The Department's goals and objectives and performance measures should be geared toward addressing these areas in an effective relevant manner.

By immediately adopting strategic planning, the Redmond Fire Department will be embracing a new paradigm and preparing itself to productively engage the future service demands that will face the community. Master planning is a twenty-year old term with twenty-year old assumptions. The fire service organization of today that wants to excel at effectiveness, efficiency, and productivity, needs to be ahead of the information, growth, and technology curve. Strategic planning is the only way to ensure that fire service leaders have the most up to date information regarding their community's service needs and armed with such, can accurately deliver the level of service that the community wants. If your information is more than two years old, your working off old paradigms and you are destined to follow the Swiss Watchmakers who failed to see the value of their own invention, the quartz movement watch.

Redmond can no longer be described as primarily a residential community, not with a workforce population of 58,500. Its fire department's planning tools must reflect this change and the community's service needs!

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Appendix A

**National Fire Academy
Applied Research Project****Survey
for
Executive Leadership**

Topic: Analyzing the Relevance and Effectiveness of the Current Fire Services Master Plan Utilized by the Redmond, Washington, Fire Department.

Name of Your Agency _____

Phone number for follow up contact (____)_____

1. Does your department have a master plan document?

YES _____ **NO** _____

If Yes then please proceed to the following questions: _____

2. What year was your department's original document developed?

19 _____

3. Dates of updates to the master plan, if any:

4. Was your department's original document developed with the assistance of a consultant?

_____ **Yes** _____ **No**

5. Was a consultant utilized to update your document?

_____ **Yes** _____ **No** _____ **No Update**

6. When is your department planning its next update?

_____ **Within 1 year** _____ **2 - 5 years** _____ **5 - 10 years**

_____ 10 years or more _____ No plan to update at this time.

A-2

7. Does your department's document cover short and long term planning?

_____ 1 to 5 years _____ 5 - 10 years _____ 10 -15 years

_____ 15 -20 years _____ Greater than 20 years.

8. Does your master plan document cover any of the following categories (Please check as many that apply):

_____ Executive Summary _____ Apparatus, Equipment, &
Facilities

_____ Introduction _____ Training

_____ Measure Effectiveness, Efficiency, and/or Productivity _____ Management Structure &
Organization

_____ Operations _____ Response Times

_____ Fire Prevention _____ Data Analysis

_____ Emergency Preparedness _____ Community Demographics

_____ Communications _____ Commercial Demographics

_____ Options and Recommendations _____ Comparable Agency Info.

9. Does your department make a distinction between master planning and strategic planning?

_____ Yes _____ No

10. Would a copy of your department's document or its executive summary be available for review?

_____ Yes _____ No

_____ Executive Summary _____ Master Plan

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Comments _____

If possible, please send or fax this survey to:

**MICHAEL GANZ
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8450 161 AVE. NE
REDMOND, WASHINGTON 98052
FAX # (425) 556-2227
PHONE # (425) 556-2200**

Thank you for your participation in completing this survey. The information gathered will be utilized in a research paper for the National Fire Academy's Executive Fire Officer Program.